

B1
concl.

a) a faceplate of a field emission display device, said faceplate comprising phosphor containing wells disposed above one side thereof;

b) an opaque matrix for separating subpixel regions of said faceplate; and

c) a barrier layer disposed over said opaque matrix and said subpixel regions of said faceplate, wherein said barrier layer prevents penetration by electrons directed towards said faceplate.

Sub D17

10. (Twice Amended) A protected cathode substrate structure of a field emission display device, said protected cathode substrate comprising:

B2

a) a cathode substrate of a field emission display device, said cathode substrate comprising an electron emitting structure disposed above one side thereof; and

b) a substantially continuous barrier layer of substantially uniform thickness disposed over said one side of said cathode substrate, wherein said barrier layer prevents electron bombardment by electrons originating from said electron emitting structure.

B3

19. (Twice Amended) A method for protecting a substrate structure of a field emission display device, said method comprising the steps of:

a) providing a faceplate structure of a field emission display device, said faceplate structure comprising an opaque matrix for separating subpixel regions of said faceplate structure; and

B3
conch

b) disposing a barrier layer over said opaque matrix and over said subpixel regions of said faceplate structure, wherein said barrier layer prevents penetration by electrons.

Please cancel Claim 21 without prejudice.

36

39. (New Claim) A method for protecting a cathode structure of a field emission display device, said method comprising the steps of:

a) providing a cathode structure of a field emission display device, said cathode structure comprising an electron emitting structure disposed above one side thereof; and

b) disposing a substantially continuous barrier layer of substantially uniform thickness over said one side of said cathode structure, wherein said barrier layer prevents penetration by electrons.

37

40. (New Claim) The method for protecting a cathode structure of a field emission display device as recited in Claim 36 wherein said cathode structure comprises a cathode substrate of said field emission display device.

38

41. (New Claim) The method for protecting a cathode structure of a field emission display device as recited in Claim 36 wherein step a) comprises providing a high sodium substrate structure for said field emission display device.

39
42. (New Claim) The method for protecting a cathode structure of a field emission display device as recited in Claim 36 wherein step b) comprises disposing said barrier layer over said cathode structure such that said barrier layer has a thickness sufficient to prevent substantial penetration of said electrons therethrough.

40
43. (New Claim) The method for protecting a cathode structure of a field emission display device as recited in Claim 36 wherein step b) comprises disposing a barrier layer over said cathode structure wherein said barrier layer is selected from the group consisting of silicon dioxide, Al_2O_3 , CrO_x , ZnO , Si_3N_4 , SiO_2 , TaO_5 , Tin Oxide, ITO, ZrO_2 , Y_2O_3 , TiO_2 and MgO and combinations thereof.

41
44. (New Claim) The method for protecting a cathode structure of a field emission display device as recited in Claim 36 wherein step b) comprises disposing said barrier layer to a thickness of approximately 100 nanometers over said substrate structure.

42
45. (New Claim) The method for protecting a cathode structure of a field emission display device as recited in Claim 36 wherein step b) comprises disposing said barrier layer over said cathode structure wherein said barrier layer prevents migration of contaminants from said cathode structure into said field emission display device.

43
46. (New Claim) The method for protecting a cathode structure of a field emission display device as recited in Claim 36 wherein step b)

comprises disposing said barrier layer over said cathode structure such that said barrier layer prevents migration of sodium from said substrate structure into said field emission display device.

by
concl.

44
47. (New Claim) The method for protecting a cathode structure of a field emission display device as recited in Claim 36 wherein step b) comprises disposing an electrically conductive barrier layer over said cathode structure.
